

Amendments to the Claims

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1. (Original): An aerosol generator for producing an aerosolized powder, said aerosol generator comprising:

a metering pocket, with powder loaded into said metering pocket;

a jet for directing high velocity gas into said metering pocket so as to fluidize the powder and produce an expansive bolus; and

a mixing chamber into which the expansive bolus is directed.

2. (Original): The aerosol generator of claim 1, wherein said metering pocket is a micropocket having a volume of the order of one cubic millimeter.

3. (Original): The aerosol generator of claim 1, wherein said jet directs gas at a velocity approaching Mach 1 into said metering pocket.

4. (Original): The aerosol generator of claim 1, wherein said jet directs gas impulsively into said metering pocket.

5. (Original): The aerosol generator of claim 1, wherein said jet directs gas continuously into said metering pocket.

6. (Original): The aerosol generator of claim 1, wherein said jet directs gas both continuously and impulsively into said metering pocket.

7. (Original): The aerosol generator of claim 1, wherein said jet directs high velocity gas into said metering pocket through a passageway in a wall of said metering pocket.

8. (Original): The aerosol generator of claim 1, wherein said jet directs high velocity gas into said metering pocket from outside said metering pocket.

A1 9. (Currently amended): An The aerosol generator for producing an aerosolized powder, said aerosol generator comprising: of claim 1, which further comprises:

a metering pocket;

a powder chamber containing powder to be aerosolized;

a sealing gland separating said powder chamber (122) and said mixing chamber; and wherein

said metering pocket comprising comprises a microscop in the form of a plunger rod having a tip with said metering pocket formed within said tip, said plunger rod passing through powder in said powder chamber so as to load powder within said metering pocket and then engaging and penetrating said sealing gland;

a jet for directing high velocity gas into said metering pocket so as to fluidize the powder and produce an expansive bolus; and

a mixing chamber into which the expansive bolus is directed.

10. (Re-presented - formerly dependent claim # 10): An The aerosol generator for producing an aerosolized powder, said aerosol generator comprising: of claim 1, which further comprises:

a body;

bl a powder pocket cylinder cavity within said body and a powder pocket cylinder within said powder pocket cylinder cavity, said powder pocket cylinder having an outer cylindrical surface and a plurality of metering pockets formed within said cylindrical surface, with powder loaded into said metering pockets; and

a passageway within said body communicating with a metering pocket of said plurality when said metering pocket is in an active position so as to provide access to said metering pocket;

a jet for directing high velocity gas into said metering pocket so as to fluidize the powder and produce an expansive bolus; and

a mixing chamber into which the expansive bolus is directed.

11. (Original): The aerosol generator of claim 10, which further comprises:

a metering cylinder cavity within said body and a rotating metering cylinder within said metering cylinder cavity, said rotating metering cylinder comprising an outer tube with first and second openings in the wall of said outer tube, said first opening being selectively alignable with said passageway communicating with said metering pocket; and wherein

said gas jet is within said outer tube and directs high velocity gas through said first opening into said metering pocket, thereby fluidizing powder which passes through said first opening into the interior of said outer tube and out through said second opening as an expansive bolus.

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6C 12. (Currently amended): An The aerosol generator for producing an aerosolized powder, said aerosol generator comprising: of claim 1, which further comprises

a megadose disc having a surface and a plurality of metering pockets formed in said surface, with powder loaded into said metering pockets;

a mechanism for sequentially presenting said metering pockets to the location of a jet which directs high velocity gas into the presented metering pocket so as to fluidize the powder and produce an expansive bolus; and

a mixing chamber into which the expansive bolus is directed.

13. (Original): An aerosol generator for producing an aerosolized powder, said aerosol generator comprising:

a source of a liquid solution of an active ingredient and a volatile solvent;

an atomizer for atomizing the solution to produce droplets from which the solvent evaporates to leave an expansive bolus of solute residue; and

a mixing chamber into which the expansive bolus is directed.

A3 14. (New): An aerosol generator for producing aerosols transported by a gas flow at a predictable average mass flow rate, said aerosol generator comprising:

a source of a liquid solution of an active ingredient and a volatile solvent;

an atomizer for atomizing the solution to produce droplets from which the solvent evaporates to leave an expansive bolus of solute residue;

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a mixing chamber into which the expansive bolus is delivered, said mixing chamber serving to still the bolus; and a mixing chamber outlet.

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15. (New): The aerosol generator of claim 14, wherein said atomizer operates continuously.

16. (New): The aerosol generator of claim 14, wherein:

said atomizer operates impulsively to deliver successive boli to said mixing chamber; and

said mixing chamber serves to still and mix the bolus just delivered with boli delivered earlier

17. (New): The aerosol generator of claim 14, wherein:

expansive boli are delivered to a lower portion of said mixing chamber, said mixing chamber outlet comprises an upper portion of said mixing chamber, and there is an upward gas flow within said mixing chamber; and

the dimensions of said mixing chamber are such that aerosol particles whose Stokes flow settling velocity is higher than the upward gas flow velocity elutriate out.

18. (New): An aerosol generator for producing aerosols transported by a gas flow at a predictable average mass flow rate, said aerosol generator comprising:

a metering pocket;

a mechanism for repeatedly loading powder into said metering pocket;

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a jet for directing high velocity gas into said metering pocket so as to fluidize the powder and produce an expansive bolus;

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a mixing chamber into which the expansive bolus is delivered, said mixing chamber serving to still and mix the bolus just delivered with boli delivered earlier; and
a mixing chamber outlet.

19. (New): The aerosol generator of claim 18, wherein:

expansive boli are delivered to a lower portion of said mixing chamber, said mixing chamber outlet comprises an upper portion of said mixing chamber, and there is an upward gas flow within said mixing chamber; and

the dimensions of said mixing chamber are such that aerosol particles whose Stokes flow settling velocity is higher than the upward gas flow velocity elutriate out.

20. (New): An aerosol generator for producing aerosols transported by a gas flow at a predictable average mass flow rate, said aerosol generator comprising:

a plurality of metering pockets, with powder loaded into said metering pockets;

a mechanism for sequentially presenting said metering pockets to the location of a jet which directs high velocity gas into the presented metering pocket so as to fluidize the powder and produce an expansive bolus;

a mixing chamber into which the expansive bolus is delivered, said mixing chamber serving to still and mix the bolus just delivered with boli delivered earlier; and
a mixing chamber outlet.

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21. (New): The aerosol generator of claim 20,
wherein:

expansive boli are delivered to a lower portion of
said mixing chamber, said mixing chamber outlet comprises an
upper portion of said mixing chamber, and there is an upward gas
flow within said mixing chamber; and

the dimensions of said mixing chamber are such that
aerosol particles whose Stokes flow settling velocity is higher
than the upward gas flow velocity elutriate out.
